



## Load Securing Information Sheet

Sir Isaac Newton's First Law of Motion states that an object at rest tends to stay at rest and that an object in motion tends to stay in motion with the same speed and in the same direction unless acted upon by an unbalanced force (COL Neal H. Bralley, ret.).

Source: [http://www.almc.army.mil/alog/issues/JulAug07/safety\\_tiedown.html](http://www.almc.army.mil/alog/issues/JulAug07/safety_tiedown.html)

### A. General

1. Legal requirements and common sense demand that all loads carried on vehicles are secured, whatever the journey. This is to protect the people involved in loading, unloading, and driving the vehicle, together with other road users, pedestrians, the load itself and the vehicle as well as the environment.
2. Loading and unloading should be carried out by appropriately trained staff that is aware of the risks involved. Drivers should also be aware of the additional risk of the load, or parts of the load, moving when the vehicle is being driven. This applies to all vehicles and to all types of load.
3. When transporting hazardous/dangerous goods, load securing is especially important. Special requirements are part of the European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR).



Source: European Best Practice Guidelines on Cargo Securing for Road Transport

### B. In Germany

1. According to §22 of the German traffic regulation (*Straßenverkehrsordnung*, StVO), loads must be stowed away and secured so that they will not move, tilt over, roll, fall, or make avoidable noise during transportation. Both the loader and driver of the vehicle are responsible for properly securing loads.
2. The German term *Formschluss* means prevent the load from moving by filling all free space, ensuring a tight fit for the load.
3. The term *Kraftschluss*, on the other hand, means to increase contact pressure, thereby increasing friction and preventing the load from moving. This can be accomplished by using anti-friction (non-slip) mats and straps.
4. Proper load securing must include both methods.
5. Fines for driving a vehicle with an unsecured load start at 20 Euros and quickly increase as potential for accidents increases.

### C. Examples at USAG Schweinfurt

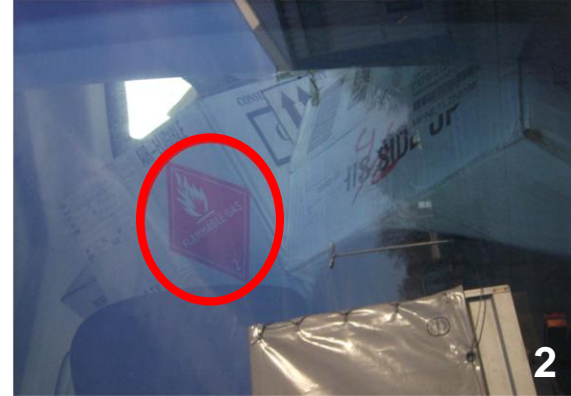
**Pictures 1 & 2 (next page):** Observed in November 2011: Unsecured boxes of aerosol cans (UN 1950, flammable, hazardous material) transported inside a GOV; during braking and accelerating, the boxes may slide, tip over and/or hit the driver or passengers!

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USAG Schweinfurt  
DPW Environmental Division

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**Picture 3 (below):** Observed at a motor pool in November 2011: Good example of *Formschluss* (pallets fill free space and prevent movement of the load).



**Picture 4 (above):** Observed at a motor pool in November 2011: The load on top is not properly secured (not tied down) and extends too high above the vehicle walls.



**Pictures 5 & 6 (above):** Observed in December 2011: Pallets and paving stones are unsecured and may slide and/or fall off and cause serious accidents.

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